1. A system for selectively concentrating an agent within a fluid medium, said system comprising:

a first traveling wave grid having (i) a first substrate, (ii) a first plurality of closely spaced and parallel electrically conductive electrodes extending across said first substrate, and (iii) a first plurality of buses providing electrical communication with said first plurality of electrodes;

a second traveling wave grid having (i) a second substrate, (ii) a second plurality of closely spaced and parallel electrically conductive electrodes extending across said second substrate, and (iii) a second plurality of buses providing electrical communication with said second plurality of electrodes;

an effective amount of a fluid medium adapted to accommodate said agent undergoing migration therein, said fluid medium in contact with at least a portion of said first plurality of electrodes and at least a portion of said second plurality of electrodes;

at least one voltage controller providing a multi-phase electrical control signal to said first plurality of buses, said first plurality of electrodes, said second plurality of buses, and said second plurality of electrodes, wherein said voltage controller is configured to apply said control signal to said first traveling wave grid and said second traveling wave grid such that said agent migrates through said fluid medium at least partially across said first traveling wave grid in a direction generally perpendicular to the direction of said first plurality of electrodes, and then further migrates through said fluid medium at least partially across said second traveling wave grid in a direction generally perpendicular to the direction of said second plurality of electrodes.

2. The system of claim 1 wherein said first traveling wave grid is oriented at an angle of approximately 90° from said second traveling wave grid.

3. The system of claim 1 wherein said first traveling wave grid is oriented substantially parallel to said second traveling wave grid.

4. The system of claim 1 further comprising:

a planar conductor providing a voltage potential with respect to at least one of said first traveling wave grid and said second traveling wave grid to thereby provide a bias field.

5. A method for concentrating an agent dispersed within a fluid medium by use of a system of traveling wave grids, said system including (i) a first traveling wave grid having a substrate, a plurality of electrodes, and buses providing electrical communication with said electrodes, (ii) a second traveling wave grid having a substrate, a plurality of electrodes, and buses providing electrical communication with said electrodes of said second grid, and (iii) a voltage controller providing a control signal to said electrodes of said first and second traveling wave grids, said method comprising;

providing said fluid medium containing said agent in proximity to said first and said second traveling wave grids;

sequentially applying said control signal to said plurality of electrodes of said first traveling wave grid to induce movement of said agent in said fluid medium to form a first region in said medium of high concentration of agent;

sequentially applying said control signal to said plurality of electrodes of said second traveling wave grid to induce further movement of said agent in said fluid medium to thereby form a second region in said medium of high concentration of agent.

6. The method of claim 5 wherein the concentration of agent in said second region is greater than the concentration of agent in said first region.

7. The method of claim 5 wherein the concentration of agent in both said first region and said second region is greater than the initial concentration of agent in said medium.

8. A selectively addressable traveling wave grid system comprising:

a point electrode grid including a substrate and a plurality of individually addressable, electrically conductive point electrodes disposed on said substrate;

a voltage controller providing a multi-phase control signal;

a plurality of electrical contacts providing electrical communication between said point electrode grid and said voltage controller, wherein each said point electrode may be individually selected to receive said control signal.

9. The system of claim 8 wherein said plurality of point electrodes are disposed on said substrate in linear rows and columns extending at right angles with respect to each other, wherein upon said voltage controller providing said control signal

to said grid, a row of point electrodes disposed on said substrate may concurrently receive said control signal and subsequently a column of point electrodes disposed on said substrate may concurrently receive said control signal.

10. The system of claim 8 further comprising:

a planar conductor providing a voltage potential with respect to said point electrode grid to thereby provide a bias field.

11. A method for concentrating an agent dispersed within a fluid medium by use of a selectively addressable traveling wave grid system, said system including (i) a point electrode grid having a substrate and a plurality of individually addressable, electrically conductive point electrodes disposed on said substrate, (ii) a voltage controller providing a multi-phase control signal, and (iii) a plurality of electrical contacts providing electrical communication between said point electrode grid and said voltage controller, said method comprising:

providing said fluid medium containing said agent in proximity to said point electrode grid;

applying said control signal to a first portion of said plurality of point electrodes that are disposed in a first row on said substrate;

applying said control signal to a second portion of said plurality of point electrodes that are disposed in a second row on said substrate, whereby a region is formed in said medium having a relatively high concentration of said agent.

12. The method of claim 11 further comprising:

applying said control signal to a third portion of said plurality of point electrodes that are disposed in a first column on said substrate; and

applying said control signal to a fourth portion of said plurality of point electrodes that are disposed in a second column on said substrate, whereby a second region is formed in said medium having a relatively high concentration of said agent.

13. The method of claim 12 wherein the concentration of said agent in said second region resulting from application of said control signal to said columns, is greater than the concentration of said agent in said region resulting from application of said control signal to said rows.

14. The method of claim 12 wherein the concentration of said agent in both of said region resulting from application of said control signal to said rows and said second region, is greater than the initial concentration of agent in said medium

15. A system for detecting agents in a flowing fluid medium, said system comprising:

a filter element adapted to collect agents dispersed in a fluid medium having a size greater than the pass-through size limit of said filter element;

a traveling wave grid having a plurality of electrically conductive electrodes disposed on said filter element;

a voltage controller adapted to provide a multi-phase control signal to said plurality of electrodes; and

a detector adapted to detect said agents in said fluid medium, said detector disposed in proximity to a region of said traveling wave grid.

16. The system of claim 15 further comprising:

a second traveling wave grid having a substrate and a plurality of electrically conductive electrodes disposed on said substrate, said second grid positioned proximate to said traveling wave grid disposed on said filter element.

17. The system of claim 15 further comprising:

a planar conductor providing a voltage potential with respect to said traveling wave grid to thereby provide a bias field.

18. A method for detecting agents in a flowing fluid medium using a system having (i) a filter element adapted to collect agents dispersed in a fluid medium having a size greater than the pass-through size limit of said filter element, (ii) a traveling wave grid having a plurality of electrically conductive electrodes disposed on said filter element, (iii) a voltage controller adapted to provide a multi-phase control signal to said plurality of electrodes, and (iv) a detector adapted to detect said agents in said fluid medium, said detector disposed proximate to a region of said traveling wave grid, said method comprising:

positioning said filter element and said traveling wave grid of said system

in said flowing fluid medium such that said traveling wave grid is upstream of said filter element;

collecting said agents having a size greater than the pass-through size limit of said filter element, along said filter element;

activating said traveling wave grid by selectively applying said control signal from said voltage controller to portions of said plurality of electrodes whereby said agents collected on said filter element are moved to said detector;

detecting said agents moved from said filter element by said traveling wave grid and said controller.

19. The method of claim 18 wherein said flowing fluid medium is water.